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Day of Observation.	Satellite.	Phenomena.	Mean Solar Time of Obs.	Mean Solar Time from N.A.	Observer.
1871.			h m s	h m s	
Nov. 5	III	Ecl. disapp.	17 0 49·1	16 58 29·9	G.
18 (*e*)	IV	Ecl. reapp.	15 6 23·2	15 12 27·0	W. C.
Dec. 4 (*f*)	III	Ecl. reapp.	12 7 55·8	12 5 47·5	G.
,,	III	Occ. disapp. 1st cont.	12 25 52·8	12 30 ...	,,
,,	III	,, last cont.	12 29 7·3		,,
29	III	Tr. ing. 1st cont.	12 16 36·4	12 19 ...	C.
,,	III	,, last cont.	12 23 5·3		,,
30	I	Ecl. disapp.	10 47 38·9	10 48 11·5	G.
,,	IV	Tr. ing. 1st cont.	11 7 45·6	11 21 ...	,,
,,	IV	,, last cont.	11 12 14·8		,,
,,	IV	Tr. egr. bisection	15 25 33·2	15 35 ...	E.
,,	IV	,, last cont.	15 32 32·1		,,

(*a*) Clouds passing over the planet.

(*b*) Cloudy; observation not satisfactory.

(*c*) The images of *Jupiter* and the satellites were very tremulous and faint.

(*d*) The time noted is very accurate. The satellite was of extreme faintness when first noticed.

(*e*) The satellite when first seen was extremely faint, and certainly was not visible 10ˢ before.

(*f*) Satellite very faint; it reappeared near the planet.

The initials W. C., E., C., L., J. C., H. C., and G., are those of Mr. Christie, Mr. Ellis, Mr. Criswick, Mr. Lynn, Mr. Carpenter, Mr. H. J. Carpenter, and Mr. Goldney.

An Early Transit of Mercury. Communicated by the Rev. A. Freeman, M.A., Fellow of St. John's College, Cambridge.

A transit of *Mercury* was observed at St. John's College, Cambridge, in 1782. The MS. record, never yet published, still exists. It appears to be in the handwriting of Dr. Isaac Pennington.

" Nov. 12, 1782.

	m s	
Regulator Clock slow	6 : 4·5	
Equation of Time	15 : 32 ‡	
Apparent Noon	XIʰ : 38 : 22·5	per clock.
☿ Ingress	II : 51 :	apparent time.
Ingress	II : 29 :	per clock.
☿ Egress	IV : 15 :	apparent time.
Egress	III : 53 :	per clock."

This observation is the more valuable, because clouds prevented Dr. Nevil Maskelyne from completing the observation at Greenwich. In the *Greenwich Observations* for 1782, he remarks, that, " On the going off of a cloud I first saw *Mercury* with the 46-inch

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achromatic, magnifying 200 times, to make a considerable notch in the Sun's limb at $2^h\ 49^m\ 53^s$ apparent time, and at $2^h\ 54^m\ 55^s$ apparent time, I first was certain of light appearing between the limbs of the Sun and *Mercury*."

The mean of Maskelyne's observations would give a time $2^h\ 52^m\ 24^s$, which would be somewhat later than the ingress of *Mercury's* centre. Allowing 24^s for east longitude of Cambridge, this differs by 1^m from the record of St. John's College. The duration of the transit was $1^h\ 24^m$, remarkably long.

It should be noted at (‡) that the *Connaissance des Temps pour l'an* 1782 gives as the Equation of Time for the day $15^m\ 33^s$. This number of *seconds* is evidently required to make the sum of the first three times of the above record exactly equal to XII^h.

An account of the old Observatory of St. John's College, removed in 1859, will be found in the observations of the Rev. Thomas Catton, made between 1791 and 1826, and published in Vol. xxii. of the *Memoirs of the Royal Astronomical Society*, 1854.

Proposed devotion of an Observatory to observation of the phenomena of Jupiter's Satellites. By G. B. Airy, Astronomer Royal.

The position which the Royal Astronomical Society holds in the astronomical world may well justify it in employing its judgment and its influence in the direction of astronomical enterprises exterior to its own body. Guided by this consideration, I venture to submit to the Society whether they may not adopt, as an idea worthy of promulgation under their auspices, the proposal that one Observatory should be permanently devoted to the observation of the phenomena of *Jupiter's* satellites.

It is well known to the students of Gravitational Astronomy that the theory of the movements of *Jupiter's* satellites is a very singular one, perhaps the most interesting among the planetary applications of the theory of Gravitation. And the results are striking, especially in the remarkable enchainment which they exhibit in the movements of the three interior satellites, which at the same time are effected by the mass of the fourth. The fourth satellite has a claim peculiar to itself; it is on that satellite that observations must be made for determining the mass of *Jupiter* (the element which in the solar system is next in importance to the mass of the Sun). It is by it that the mass of *Jupiter* was determined originally (with some inaccuracy) by Pound, and subsequently in the first instance by myself (as is detailed in the *Memoirs* of this Society), and in the second instance by Bessel.

In late years the observations of the satellites have been

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